



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,841	07/31/2003	Chun Shiah	ET01-010	1036

7590 04/06/2005

STEPHEN B. ACKERMAN
28 DAVIS AVENUE
POUGHKEEPSIE, NY 12603

EXAMINER

NGUYEN, LONG T

ART UNIT	PAPER NUMBER
----------	--------------

2816

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/631,841

Applicant(s)

SHIAH, CHUN

Examiner

Long Nguyen

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is responsive to the amendment filed on 1/14/05.
2. The amendment filed 1/14/05 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the recitations regarding the capacitance values of CHC and Cp such that the coupling ratio of $CHC/(C_p + CHC) \approx 1$ recited from line 3 of paragraph [0018] to line 1 of paragraph [0019] recited in the specification filed on 1/14/05 and in claims 10, 21, 31 and 41; and the limitation regarding the ratio of the large capacitor and the parasitic capacitor approaching unity value recited in independent claims 1, 12, 23 and 33.

Applicant is required to cancel the new matter in the reply to this Office Action.

Specification

3. The substitute specification filed on 1/14/05 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: applicant fails to provide a statement that the substitute specification contains no new matter.

Claim Objections

4. Claims 1-42 are objected to because of the following informalities:

Claim 1, line 4, before "between", --coupled-- should be inserted.

Claim 1, line 5, it appears that "said large capacitor" should be changed to --for--.

Claims 2-11 are objected to because they include the informalities of claim 1.

Art Unit: 2816

Claim 2, line 13-14, "a drain node which is connected to the drain of a fourth transistor," is suggested to be deleted to avoid unclear antecedent basis later on (see line 18).

Claim 2, line 19, --the-- should be inserted before "lower".

Claim 2, line 20, "an" should be changed to --the--.

Claim 2, line 20, "externally" is suggested to be deleted.

Claim 2, line 21, it is suggested that "which is an" should be changed to --connected to a drain node of the third transistor and to an-- to provide the limitation that was suggested to be deleted on line 13-14.

Claim 2, line 21, "to" should be changed to --of--.

Claims 3-9 are also objected to because they include the informalities of claim 2.

Claim 8, line 2, "produces output" should be changed to --produces the output--.

Claim 8, line 4, "transistor," should be changed to --transistor.--.

Claim 12, line 6, before "between", --coupled-- should be inserted.

Claim 12, line 7, it appears that "voltage, said large capacitor providing" should be changed to --voltage for providing--.

Claims 13-22 are objected to because they include the informalities of claim 12.

Claim 13, line 11-12, "a drain node which is connected to the drain of a fourth transistor," is suggested to be deleted to avoid unclear antecedent basis later on (see line 17).

Claim 13, line 16, --the-- should be inserted before "lower".

Claim 13, line 16, "an" should be changed to --the--.

Claim 13, line 17, "externally" is suggested to be deleted.

Art Unit: 2816

Claim 13, line 17, it is suggested that “which is an” should be changed to --connected to a drain node of the third transistor and to an-- to provide the limitation that was suggested to deleted on line 11-12.

Claim 13, line 17, “to” should be changed to --of--.

Claims 14-20 are also objected to because they include the informalities of claim 13.

Claim 19, line 2, “produces output” should be changed to --produces the output--.

Claim 19, line 3, “transistor;” should be changed to --transistor.--.

Claim 23, line 5, “said” should be deleted.

Claim 23, line 7, it appears that “said large capacitor” should be changed to --for--.

Claims 24-32 are objected to because they include the informalities of claim 23.

Claim 24, line 6, “as” should be changed to --the--.

Claim 24, line 17-18, “connecting a drain of the third transistor to the drain of a fourth transistor,” is suggested to be deleted to avoid unclear antecedent basis later on (see lines 23 and 28).

Claim 24, line 26, “an” should be changed to --the--.

Claim 24, line 27, “externally” is suggested to be deleted.

Claim 24, line 28, it is suggested that “to an input to” should be changed to --to a drain node of the third transistor and to an input of-- to provide the limitation that was suggested to deleted on line 17-18.

Claims 25-30 are also objected to because they include the informalities of claim 24.

Claim 29, line 2, “produces output” should be changed to --produces the output--.

Claim 29, line 5, “transistor;” should be changed to --transistor.--.

Art Unit: 2816

Claim 33, line 9, it appears that "said large capacitor" should be changed to --for--.

Claims 34-42 are objected to because they include the informality of claim 33.

Claim 34, line 1, "33" should be changed to --34--.

Claim 34, line 9, "as" should be changed to --the--.

Claim 34, line 21-22, "means for connecting a drain node of the third transistor to the drain node of a fourth transistor" is suggested to be deleted to avoid unclear antecedent basis later on (see lines 27 and 33).

Claim 34, line 31, "an" should be changed to --the--.

Claim 34, line 32, "externally" is suggested to be deleted.

Claim 34, line 17, it is suggested that "to an input to" should be changed to --to a drain node of the third transistor and to an input of-- to provide the limitation that was suggested to be deleted on line 21-22.

Claims 35-40, line 1, "24" should be changed to --34--.

Claim 39, line 2, "produces output" should be changed to --produces the output--.

Claim 39, line 5, "transistor;" should be changed to --transistor.--.

Claims 41 and 42, line 1, "23" should be changed to --33--.

Appropriate correction to the above is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2816

6. Claims 1-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, at the time the application was filed on 7/31/03, the originally disclosure (filed 7/31/03) does not support the limitation “a coupling ratio between said large capacitor and a parasitic capacitor coupled between said bias node and a ground reference point approaching a unity value such that a biasing voltage at said biasing node follows said lower supply voltage to minimize effects of a ground noise signal between the lower supply voltage and the ground reference point” as recited in independent claims 1, 12, 23 and 33 (amendment filed on 1/14/05). Furthermore, the original disclosure does not support the limitation regarding the capacitance values of C_{HC} and C_p such that the coupling ratio of $C_{HC}/(C_p + C_{HC}) \approx 1$ as recited in claim 10, 21, 31 and 41 (amendment filed on 1/14/05).

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, the recitation “a coupling ratio between said large capacitor and a parasitic capacitor coupled between said bias node and a ground reference point approaching a unity value” on lines 5-8 is misdescriptive since it is inconsistent with what is disclosed. Note that newly added recitation on lines 3-12 of paragraph [0018] of the specification recites that the

Art Unit: 2816

ratio of $CHC/(C_p + CHC) \approx 1$, so the coupling ratio of the large capacitor (CHC) and the parasitic capacitor (C_p) approaching a unity value recited on lines 5-8 of claim 1 is misdescriptive. Clarification and/or appropriate correction is required. Note that the similar problem also exists in independent claims 12, 23, and 33.

Claims 2-11, 13-21, and 34-42 are indefinite because they include the indefiniteness of claims 1, 12, 23 and 33, respectively.

Also in claim 9, the recitation “the third transistor and the fourth transistor activate almost simultaneously” is indefinite because it is inconsistent with the operation of the circuitry. As recited earlier in claim 2, the third and fourth transistors of this claim are transistors P12 and N12, respectively, in Figure 2. Clearly from the operation of Figure 2, when transistor N12 is ON then P12 must be OFF, and when transistor P12 is ON then transistor N12 must be OFF. Thus, the third transistor P12 and the fourth transistor N12 cannot be activated simultaneously. Clarification and/or appropriate correction is required. Note that the similar problem also exists in independent claims 20, 30 and 40.

Also in claim 10, the recitation “the large capacitor charge couples the bias node” on line 2-3 is indefinite because it is not clear whether applicant means “the large capacitor charges the bias node”, or “the large capacitor couples the bias node”. Clarification and/or appropriate correction is required. Note that the similar problem also exists in independent claims 21, 31 and 41.

Also in claim 11, the recitation “the capacitance value of the large capacitor relative to said parasitic capacitor” on line 2-3 is indefinite because it is not clear what it means by “relative

Art Unit: 2816

to said parasitic capacitor". Clarification and/or appropriate correction is required. Note that the similar problem also exists in independent claims 22, 32 and 42.

Also in claim 12, "said distribution network" lacks antecedent basis and it is suggested that "and connected to said distribution network" on line 2-3 be deleted.

Also in claim 23, "a ground noise signal" on line 11 is unclear antecedent basis because it is not clear whether it is the same as "ground noise" recited on line 1 of the claim. Clarification and/or appropriate correction is required.

Also in claim 33, the preamble "an apparatus ... buffer receiver comprising" on line 1-2 of the claim causes the claim to be indefinite because it is not clear whether it means "an apparatus comprising", or "an input buffer comprising". Further, "a ground noise signal" on line 13 is unclear antecedent basis because it is not clear whether it is the same as "ground noise" recited on line 1 of the claim. Clarification and/or appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA, Figure 1) in view of Rapp (USP 6,373,328).

Note that Figure 1 of the AAPA discloses an input buffer receiver, which includes: a buffer input portion (100) comprising a bias node (b1) for providing a bias voltage (Vb1), a parasitic capacitor (Cp) connected between the bias node and a ground reference, a first

Art Unit: 2816

transistor (NMOS N1), a second transistor (PMOS P1), a third transistor (PMOS P2), a fourth transistor (NMOS N2), and a lower supply voltage (Vss); and a buffer output portion (200) in communication with the buffer input portion for producing an output signal (Signal_Out).

Figure 1 of the AAPA does not disclose that the input buffer portion (100) including a large capacitor connected between the bias node (b1) and the lower power supply (Vss). However, the Rapp reference discloses in Figure 5 an input buffer portion (76) comprising a large capacitor (90) connecting between a bias node (node connecting gates of transistors 86 and 88 together) and a lower power supply voltage (the source of the transistors 92 and 94) for stabilizing the voltage at the bias node (i.e., the voltage at the gates of transistors 86 and 88 is stabled), see lines 40-42 of Col. 9 of Rapp. Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the circuit in Figure 1 of the AAPA by providing a large capacitor connected between the bias node (b1) and the lower supply voltage (Vss which is also connected to the sources of transistors N1 and N2) for the purpose of holding the voltage at the bias node to be stabled (i.e., preventing voltage at the bias node from variations) so as to improve the performance of the circuitry. Thus, this modification meets all the limitations of claims 1-42 because the structure of the modification as discussed is substantially identical to the structure of the claim invention. Note that it is obvious that when designing a circuit, one skill in the art would like to design the circuit so that the parasitic capacitance of the circuit is as small as possible to reduce noises and delays of the circuitry, and thus the value of the parasitic capacitance is very small compares with the value of large capacitor, and that the ratio of $C_{\text{large}}/(C_{\text{large}} + C_p) \approx 1$ would also be met.

Response to Arguments

11. Applicant's arguments filed on 1/14/05 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

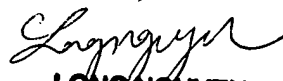
14. Any inquiry concerning this communication or earlier communications from the examiner should be directly to Examiner Long Nguyen whose telephone number is (571) 272-1753. The Examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

Art Unit: 2816

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached at (571) 272-1740. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 31, 2005


LONG NGUYEN
PRIMARY EXAMINER